

IN THE CLAIMS:

Please amend claims 1 and 2 as follows:

1. (Currently Amended) A method for removing an acidic component contained in an exhaust gas comprising:

(a) introducing raw seawater ^{and the exhaust gas} into a gas-liquid contact apparatus composed of an absorption column provided internally with at least one perforated plate at the top, bottom, or both top and bottom of the absorption column packed with at least one type of fillers to thereby effect an exhaust gas-seawater counter current contact treatment,

mix 1st then oxidize. or is it simultaneous?

according to fig. 2, (b) oxidizing the acidic component absorbed in the seawater, after the gas-liquid contact with air in an oxidation apparatus, and

(c) mixing the raw seawater, subjected to the oxidation with air, with raw seawater with the seawater, whereby [the exhaust gas and] the oxidized seawater [is] are discharged, without using chemicals, to the ocean, wherein the seawater is introduced into a gas-liquid contact apparatus including an absorption column having a column diameter of at least 500 mm and provided with at least one perforated plate having a free-space ration Fc of 0.25 to 0.5 and packed with at least one type of packing material to a packing height of 0.5m to 4m, in such an amount that a ratio L/G of the flow rate L (kg/m² • hr) of the seawater to the flow rate G (kg/m² • hr) of the gas to be treated from the top of the column is at least 3.6 and a flow rate L of the seawater is where the exhaust gas is introduced into the gas-liquid contact apparatus 1 x 10⁴ to 25 x 10⁴ kg/M² • hr and introducing a treated gas in such an amount that a range of a superficial gas velocity U_g in the apparatus from the bottom of the gas-liquid contact apparatus is less than 2 U_{gm} (m/sec);

$$U_{gm} = 49.14 Fc^{0.7} \left(\frac{\rho_G}{\rho_L} \times 10^{-3} \right)^{-0.5} \cdot \left(\frac{L}{G} \right)^{-1/3} \cdot \sqrt{g \cdot L}$$

wherein L is a capillary constant $\sqrt{2\sigma/\rho_L \cdot g}$

g is a gravitational acceleration (m/sec²), and

σ is a surface tension of seawater (kg/sec²)

in the case of using a perforated or grid plate column without weir and

downcomer composed of at least one perforated plate and the ratio ρ_G/ρ_L of the density ρ_G (kg/m³) of the treated gas to the density ρ_L (kg/m³) of seawater is at least 0.838×10^{-3} .

2. A method as claimed in claim 1, wherein the free-space ratio Fc is 0.3 to 0.4 and the ratio L/G is 7 to 25, whereby the seawater is introduced into a gas-liquid contact apparatus including an absorption column having a column diameter of at least 500 mm and provided with at least one perforated plate having a free-space ratio Fc of 0.25 to 0.5 and packed with at least one type of packing material to a packing height of 0.5 m to 4 m, in such an amount that a ratio L/G of the flow rate L (kg/m²·hr) of the seawater to the flow rate G (kg/m²·hr) of the gas to be treated from the top of the column is at least 3.6 and a flow rate L of the seawater is 1×10^4 to 25×10^4 kg/m²·hr and introducing a treated gas in such an amount that a range of a superficial gas velocity U_g in the apparatus from the bottom of the gas-liquid contact apparatus is less than 2 U_{gm} (m/sec):

— in the case of using a perforated or grid plate column without weir and downcomer composed of at least one perforated plate and the ratio ρ_G/ρ_L of the density ρ_G (kg/m³) of the treated gas to the density ρ_L (kg/m³) of seawater is at least

0.838×10^{-3}

$$U_{gm} = 49.14 \cdot Fe^{0.7} \left(\frac{\rho_G}{\rho_L} \times 10^{-3} \right)^{-0.5} \cdot (L/G)^{-1/3} \cdot \sqrt{g \cdot L}$$

wherein L is a capillary constant $\sqrt{2\sigma/\rho_L \cdot g}$,

g is a gravitational acceleration (m/sec^2), and

σ is a surface tension of seawater (kg/sec^2)

3. (Cancelled)

4. (Cancelled)

5. (New) A method as claimed in claim 1, wherein said exhaust gas is

exhausted from a boiler.